



Federal Communications Commission
Washington, D.C. 20554

November 19, 2014

DA 14-1661

Ms. Marianne Roach Casserly
Alston & Bird, LLP
950 F St., NW
Washington, DC 20004

Re: ET Docket No. 13-280

Dear Ms. Casserly:

The Office of Engineering and Technology (OET) hereby grants the Request for Extension of Waiver filed by Autoliv ASP, Inc. (Autoliv) and Caterpillar, Inc. (Caterpillar) seeking temporary waiver of the emissions limits in Section 15.515(c) of the Commission's rules. This waiver extension will permit Autoliv and Caterpillar to continue to import Autoliv's C4 vehicular radars until December 31, 2016. These radars comply with the January 1, 2010 emissions limits of Section 15.515(c), but do not comply with the limits phased in on January 1, 2014 under that same rule. However, because of the planned migration of 24 GHz vehicular radars to the 79 GHz band and because of the need to protect passive operations in the 23.6 to 24 GHz band as discussed below, we do not contemplate any future waivers for these vehicular radars. We note that the 23.6-24 GHz band is an exclusive passive band, included in footnote US246.¹

On December 30, 2013, OET granted a waiver to allow Autoliv ASP, Inc. to continue to manufacture and market to Caterpillar, Inc. until December 31, 2014 and for Caterpillar to import until that same date Autoliv's C4 vehicular radars which comply with the January 1, 2010 emissions limits of Section 15.515(c) to equip the 900 vehicles anticipated to be manufactured during that one-year period.²

On September 19, 2014, you filed a request for the Commission to extend that waiver through December 31, 2016, for up to 3000 C4 vehicular radars per year. We note that the original waiver allowed up to 900 vehicles to be equipped with the 2010 compliant C4

¹ US246 - No station shall be authorized to transmit in the following bands: 608-614 MHz, except for medical telemetry equipment, 1400-1427 MHz, 1660.5-1668.4 MHz, 2690-2700 MHz, 4990-5000 MHz, 10.68-10.7 GHz, 15.35-15.4 GHz, 23.6-24 GHz, 31.3-31.8 GHz, 50.2-50.4 GHz, 52.6-54.25 GHz, 86-92 GHz, 100-102 GHz, 105-116 GHz, 164-168 GHz, 182-185 GHz, 217-231 GHz. Medical telemetry equipment shall not cause harmful interference to radio astronomy operations in the band 608-614 MHz and shall be coordinated under the requirements found in 47 C.F.R. § 95.1119.

² See Letter from Julius P. Knapp, Chief, Office of Engineering and Technology, FCC, to Marianne Roach Casserly, Counsel for Autoliv ASP, Inc. & Caterpillar, Inc., 29 FCC Rcd 5 (OET 2013).

radars. The waiver extension request further clarifies that each vehicle requires two to eight radar units, depending on the size of the vehicle. We are therefore specifying a limit of 3000 per year on the total number of radars instead of the number of vehicles to be equipped. In this request, you also ask that the waiver be modified to allow Autoliv to import C4 vehicular radars to accommodate Autoliv's plan to move manufacturing of these C4 vehicular radars to Canada in late 2014. You state that you are seeking a limited extension of the waiver to address continuing technical challenges that have arisen in transitioning Caterpillar vehicles to a compliant radar product.

You state that Autoliv makes a variety of radar detection devices for vehicles, including other radar models (Dually Compliant Vehicular Radars) that are compliant with the emissions limits that went into effect on January 1, 2014. You state that in anticipation of the impending emissions limit change, Autoliv has successfully transitioned more than 99% of its radar sales to the Dually Compliant units and has been working diligently since mid-2011 to adapt these devices for Caterpillar's use. However, radar systems for large industrial vehicles must be specifically designed for each vehicle type with its specific characteristics taken into consideration. Specifically, in the case of Caterpillar's Large Mining Trucks and Large Wheel Loaders, you discovered that the radar product, which was intended to replace the C4 vehicular radar, is unable to be adapted to perform in the Caterpillar vehicles. This significant setback has resulted in Autoliv and Caterpillar having to select a different product for use in the Caterpillar vehicle environment, and to restart the product change process that could at least take one year to complete. You anticipate that redesign and validation of radar systems for the subject Caterpillar vehicles using compliant radars will take through 2016 to complete.

You explain that the Caterpillar vehicles cannot be operated safely without effective radar systems, due to their size and shape and their operating environment (often in mines and in narrow passageways). You also state that your waiver request is temporary in time (through December 31, 2016) and limited in scope, where no more than 3000 C4 vehicular radars per year will be commissioned and furthermore, their use will be restricted to Caterpillar vehicles only. You further state that the grant of this waiver will not have a large cumulative impact on other vehicles, as the use of Caterpillar vehicles equipped with C4 vehicular radars is limited to mining and industrial operations. Accordingly, Caterpillar requested modification and temporary extension of the current waiver in order to continue to equip the subject vehicles with the C4 vehicular radars through 2016, after which the compliant radars will be available from Autoliv.

We are authorized to grant a waiver under Section 1.3 of the Commission's Rules if the petitioner demonstrates good cause for such action. (47 C.F.R. § 1.3. *See also ICO Global Communications (Holdings) Limited v. FCC*, 428 F.3d 264 (D.C. Cir. 2005); *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).) Good cause, in turn, may be found and a waiver granted, "where particular facts would make strict compliance inconsistent with the public interest." (*Northeast Cellular, supra* at 1166; *see also ICO Global Communications, supra* at 269 (quoting *Northeast Cellular*); *WAIT Radio, supra* at 1157-59.) To make this public interest determination, the waiver cannot undermine the purposes of the rule, and there must be a stronger public interest benefit in

granting the waiver than in applying the rule. (*See, e.g., WAIT Radio, supra* at 1157 (stating that even though the overall objectives of a general rule have been adjudged to be in the public interest, it is possible that application of the rule to a specific case may not serve the public interest if an applicant's proposal does not undermine the public interest policy served by the rule); *Northeast Cellular, supra* at 1166 (stating that in granting a waiver, an agency must explain why deviation from the general rule better serves the public interest than would strict adherence to the rule).)

Based on the information provided in your request, we find that grant of a temporary waiver is appropriate. The purpose of the rule at issue is not likely to be undermined by a grant of the waiver. The emission limits in the subject rule have evolved over time, with one standard applicable to equipment manufactured after January 1, 2005, another standard applicable to equipment manufactured after January 1, 2010, and yet another standard applicable to equipment manufactured after January 1, 2014. The Commission's principal concern in adopting this rule and set of phased-in limits was the cumulative interference to passive sensing systems operating in the 23.6 to 24.0 GHz band on low earth orbiting satellites, including meteorological satellites, caused by "potentially tens of thousands of transportation vehicles employing these radar devices." (*In re Revision of Part 15 of Commission's Rules Regarding Ultra-Wideband Transmission Systems*, First Report & Order, ET Docket No. 98-153, 17 FCC Rcd. 7435, 7502 (2002).) Multiple factors, most notably the low density of vehicles, combine to indicate that the impact of this waiver on the potentially affected satellites is likely to be negligible. This waiver will apply only for systems to equip the Caterpillar vehicles with C4 vehicular radars. The maximum anticipated number of C4 vehicular radars to be manufactured during this two-year period is 3000 per year. (This will equip roughly 500 vehicles per year, which is on the same scale as the volume authorized under the initial waiver.) We further note that many of these radars will be sold to operators in other countries, and that these vehicles sometimes operate in mines, which would significantly attenuate the emissions from their radars. Nevertheless, we are concerned of the precedent this sets and of the potential of future proliferation of these devices both in the United States and abroad. It is important that passive operations in the 23.6 to 24 GHz band be protected because they provide essential data for predicting weather. We are also concerned about interference to radio astronomy observations in this band. Some observatories, *e.g.* the Green Bank Telescope in West Virginia are close to mining sites. Accordingly, we do not contemplate any further extension of this waiver.

Grant of this waiver will serve the public interest by permitting the continuation of mining and earth moving activities without a diminution in the safety of operation of these large, expensive, valuable, and potentially dangerous vehicles.

Finally, we note that Autoliv continues to be diligent in its attempts to meet the timetable for the evolution of its radars, completing its modifications for 99% of its supply in a timely fashion, and was on track to completing systems for the subject vehicles on time when it discovered that the radar product which was intended to replace the C4 vehicular radar is unable to be adapted to perform in the Caterpillar vehicles, a problem understandably difficult to anticipate.

Accordingly, pursuant to the delegated authority in Sections 0.31, 0.241, and 1.3 of the Commission's Rules, 47 C.F.R. §§ 0.31, 0.241, 1.3, we waive the emissions limits of Section 15.515(c) of our Rules to allow Autoliv ASP, Inc. and Caterpillar Inc. to continue to import Autoliv's C4 vehicular radars which comply with the January 1, 2010 emissions limits of Section 15.515(c) at a rate of up to 3000 per year until December 31, 2016.

Sincerely,

Julius P. Knapp
Chief
Office of Engineering and Technology